

REMARKS/ARGUMENTS

In the Office Action, claims 1-3, 11 and 12 were rejected, and claims 4-10 and 13-43 were allowed. Claims 11 and 12 are amended herein, new claims 44-56 are added, and the rejection of claims 1-3 is discussed.

New claims 44-56 are deemed supported in the specification as indicated below.

Rejections of claims

Claims 1-3 stand rejected as anticipated by Seela et al. The examiner states that the reference discloses compounds having a photolabile hydroxy protecting group, referring particularly to compounds 6a and 6b of the reference.

Seela et al. do disclose compounds having hydroxy protecting groups, specifically DMT (dimethoxytrityl) groups. However, these are not photolabile protecting groups but acid-labile protecting groups, as stated in the specification, p. 21. Some photolabile protecting groups and some acid-labile groups (including DMT) are disclosed in the specification at p. 11. Seela et al. do not disclose compounds of this type having a photolabile hydroxy protecting group.

Applicant respectfully requests withdrawal of this rejection.

Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as lacking steps by which the described products were used in the synthesis of others. The above amendment is deemed to remedy that lack. Support for the amendment in claim 11 is found in the specification at pp. 8-10 and 21. Support for the amendment in claim 12 is found in the specification at p. 6 and in the general knowledge of those skilled in the art that phosphoramidites are incorporated into oligonucleosides or oligonucleotides. For example, see PCT application WO 01/64958, submitted herewith in an Information Disclosure Statement.

New claims 44-56

New claims 44-46 are directed to compounds in which R₁ or R₁ together with R₂ is a photolabile amine protecting group. The specification does not explicitly mention photolabile amine protecting groups. However, this type of group is one major class of amine protecting groups, as discussed, for instance in the Boyle text "Protection of Nucleosides for Oligonucleotide Synthesis", mentioned and incorporated by reference in the specification at p. 5.

One specific photolabile amine protecting group, the dimethylformamidine group, is utilized in Examples 8-12. Thus, claims 44-46 are deemed supported by this specification.

Claims 47-51 are directed to compounds known as "reverse phosphoramidites". The compounds of claim 1 may have two configurations between groups Z^3 and Z^5 on the pentose ring. As stated in claims 1 and throughout the specification, one of Z^3 or Z^5 contains a photolabile hydroxy protecting group and the other contains a phosphoramidite group. This makes possible two configurations. In the compounds as defined by claim 3, group Z^3 contains a phosphoramidite group and group Z^5 contains a photolabile hydroxy protecting group. These compounds have the more typical amidite configuration

The compounds of claims 47-51 contain the opposite "(reverse)" configuration, namely one in which Z^3 contains a photolabile hydroxy protecting group and Z^5 contains a phosphoramidite group. Both the more common and the reverse configurations are deemed supported by the statement that "one of Z^3 or Z^5 contains a photolabile hydroxy protecting group and the other contains a phosphoramidite group".

Claims 52-55 likewise depict the reverse phosphoramidate subtype of compound III, p. 9, and are deemed supported and implicitly disclosed by the specification for the same reason. Note that in the compounds of formula III, the hydroxy protecting group is not limited to protecting groups that are photolabile but includes both photolabile and acid-labile protecting groups (specification, p. 10 line 28 - p. 11 line 23).

Just as the reverse phosphoramidites of claims 47-52 are clearly indicated by the disclosure of compounds in which one of Z^3 and Z^5 is a hydroxy protecting group and the other is a phosphoramidite, so too are the reverse amidites of compound III clearly indicated by the disclosure that in said compounds, one of R^9 and R^{10} is a hydroxy protecting group and the other is a phosphoramidite.

Claim 56 is to the specific reverse phosphoramidate of compound 12, p. 21, a species of compound III. Applicants note that compound 12 is an example of a compound having an acid-labile hydroxy protecting group, as described, for instance at p. 7 lines 10-15 and p. 11 lines 1-11.

The new claims 44-56 define compounds that are novel and unobvious, and are fully described within the parameters of this Application. Allowance is respectfully requested.

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Amdt. dated [insert date]
Reply to Office Action of August 28, 2003

PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,

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